SNOW SURVEYS AND IRRIGATION WATER FORECASTS

for the

MISSOURI and ARKANSAS

DRAINAGE BASINS

February 1, 1942

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Issued by the
United States Department of Agriculture
Soil Conservation Service
Division of Irrigation
In Cooperation with
The Colorado Agricultural Experiment Station
Colorado State College
Fort Collins, Colorado

February 10, 1942

SNOW SURVEYS AND IRRIGATION WATER FORECASTS
FOR MISSOURI AND ARKANSAS RIVERS
February 1, 1942

The following data pertaining to snow surveys and irrigation water-supply forecasts are provided by the Division of Irrigation, Soil Conservation Service, of the U. S. Department of Agriculture, in cooperation with State departments, other Federal bureaus and local organizations. The snow measurements are made principally by field personnel of the following organizations: Forest Service, National Park Service, Bureau of Reclamation, U. S. Geological Survey, War Department and State Experiment Stations. This work is otherwise conducted cooperatively with the State Engineers of Wyoming and Colorado, and various municipalities, irrigation associations, power companies and others. Precipitation records are supplied by the U. S. Weather Bureau.

PRECIPITATION DATA

WATERSHED	STATE	Precipitation October 1 to January 31	Departure from Normal	Precipitation January	Departure from Normal
		Inches	Inches	Inches	Inches
Missouri	East. Mont.	2.32	-0.16	0.19	-0.34
Missouri	Cent. Mont.	3.38	+0.24	0.54	-0.14
Missouri	North Wyo.	5.79	+0.22	0.93	-0.57
North Platte	Wyoming	4.27	+0.71	0.52	-0.34
South Platte	Colorado	4.95	+1.55	0.80	+0.38
Arkansas	Colorado	4.21	+1.24	0.49	-0.09

The accumulation of precipitation, since October first, over the Missouri drainage in Montana is approximately normal and in Wyoming, slightly above. During January the precipitation was subnormal in these areas. Over the North Platte mountain drainage, the October-January rainfall was about 3/4-inch above normal, but during January a deficiency of 1/3-inch occurred. For the upper drainage of the South Platte in Colorado, the precipitation was about 1½ inches above normal for the October-January period and 1/3-inch in excess for this last month. Precipitation was about 1¼ inches above normal over the past four months for the upper Arkansas drainage but slightly less during January.

SUMMARY OF FEBRUARY 1 SNOW SURVEYS AND COMPARISON OF DATA WITH THAT OF PREVIOUS YEARS BY WATERSHEDS

WATERSHEDS	Snow Depth			Water Content			Number courses in Average	Snow Density			1942 Water Content in Percent of	
	Seven Year Avg.*	1941	1942	Seven Year Avg.*	1941	1942		Seven Year Avg.*	1941	1942	Seven Year Avg.*	1941
	In.	In.	In.	In.	In.	In.		Percent	Percent	Percent		
MISSOURI RIVER												
Jefferson River	25.7	25.0	32.0	6.2	6.3	8.0	3	24	25	25	129	127
Madison River	39.7	40.8	41.1	10.0	10.7	10.3	6	25	26	25	103	96
Gallatin River	25.5	21.0	33.2	5.8	5.1	7.0	3	23	24	21	121	137
Missouri River**	20.0	14.7	22.5	4.6	3.2	6.0	4	23	22	27	130	188
Marias River	30.0	25.5	17.0	9.1	7.4	4.6	1	30	29	27	51	62
Yellowstone River	--	--	--	--	--	--	-	--	--	--	--	--
Shoshone River	35.2	43.4	36.6	9.0	10.6	9.7	1	26	24	26	108	91
Bighorn River	21.7	20.9	22.8	4.8	4.8	4.8	11	22	23	21	100	100
North Platte River	42.1	33.1	39.4	10.2	7.6	8.8	10	24	23	22	86	116
Sweetwater River	25.3	26.5	24.1	5.1	6.5	3.7	1	20	25	15	73	57
Laramie River	25.2	19.4	25.6	5.7	4.5	5.6	9	23	23	22	98	124
South Platte River***	17.4	16.7	20.6	2.8	2.1	3.7	3	16	13	18	132	176
Crow Creek	14.6	10.1	14.6	3.0	2.7	2.6	1	21	27	18	87	96
Poudre River	25.4	18.4	25.7	6.0	4.6	5.2	7	24	25	20	87	113
Big Thompson River	34.6	27.8	34.2	8.4	5.8	7.4	2	24	21	22	88	128
St. Vrain River	26.0	19.4	31.6	5.7	2.2	7.6	1	22	11	24	133	346
Boulder Creek	20.4	15.6	17.3	5.2	3.0	4.4	2	25	19	25	85	147
Clear Creek	26.3	25.5	29.5	4.6	3.9	4.8	1	17	15	16	104	123
ARKANSAS RIVER	28.2	30.6	27.2	6.1	6.4	5.5	8	22	21	20	90	86

*Some for shorter periods. **Headwaters of Missouri River ***Above Denver, Colo.

STUDENT OF ELEMENTARY I SHOW STEADY THE DOMINATION OF DATA

WITH CHART OF PERCENTAGE SCHEME BY AVAILABILITY

AVAILABLE	SHOW DEPTH			AVERAGE CONTENT			CONTRAST NUMBER			SHOW DEPTHS			IN PERCENT OF SCHEME		
	IGHT	IGHT	IGHT	IGHT	IGHT	IGHT	VARIANCE	IN SCHEME	IGHT	IGHT	IGHT	IGHT	IGHT	IGHT	IGHT AVERAGE CONTENT
MISSOURI STATE															
Jefferson State	1.52	0.52	0.52	5.9	5.9	0.8	5	4	52	54	52	52	52	52	52
Lincoln State	0.0	0.0	1.0	10.0	10.0	1.1	9	52	52	52	52	52	52	52	96
Washington State	1.0	0.0	2.5	5.5	1.5	0.1	5	4	52	52	52	52	52	52	121
Franklin State	0.0	1.0	5.5	4.5	0.9	1.5	4	52	52	52	52	52	52	52	121
Madison State	1.0	0.0	1.4	0.10	1.10	1.1	9	52	52	52	52	52	52	52	96
Marion State	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Montana State	0.0	2.52	0.11	1.5	4.1	5.4	5	4	52	52	52	52	52	52	52
Missouri State	0.0	1.11	5.52	4.9	5.5	0.9	4	52	52	52	52	52	52	52	121
Oklahoma State	2.5	0.12	5.52	8.5	1.1	0.1	5	52	52	52	52	52	52	52	121
Nebraska State	1.0	0.10	8.4	0.10	1.10	5.9	9	52	52	52	52	52	52	52	96
Texas State	0.0	2.5	0.52	5.9	2.9	0.8	5	4	52	52	52	52	52	52	121
Arkansas State	2.5	1.4	0.52	5.5	4.5	0.5	4	52	52	52	52	52	52	52	121
Kansas State	0.0	1.4	0.11	4.5	5.5	1.1	5	52	52	52	52	52	52	52	121
Iowa State	1.0	0.0	1.4	0.10	1.10	1.1	9	52	52	52	52	52	52	52	96
Illinois State	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Indiana State	2.5	4.4	5.52	9.9	0.9	1.5	5	4	52	52	52	52	52	52	121
Ohio State	0.0	1.0	0.11	5.9	4.1	9.1	5	4	52	52	52	52	52	52	121
Michigan State	1.0	0.0	2.5	8.5	4.4	5.4	11	52	52	52	52	52	52	52	121
Wisconsin State	1.0	0.0	1.4	5.10	1.10	1.1	9	52	52	52	52	52	52	52	96
Minnesota State	2.5	4.4	5.52	9.9	0.9	1.5	5	4	52	52	52	52	52	52	121
Iowa State	1.0	0.0	1.4	0.10	1.10	1.1	9	52	52	52	52	52	52	52	96
Nebraska State	2.5	1.4	0.52	5.9	2.9	0.8	5	4	52	52	52	52	52	52	121
Kansas State	0.0	1.4	0.11	4.5	5.5	1.1	5	52	52	52	52	52	52	52	121
Oklahoma State	1.0	0.0	1.4	0.10	1.10	1.1	9	52	52	52	52	52	52	52	96
Arkansas State	2.5	1.4	0.52	5.9	2.9	0.8	5	4	52	52	52	52	52	52	121
Texas State	0.0	1.4	0.11	4.5	5.5	1.1	5	52	52	52	52	52	52	52	121
Montana State	1.0	0.0	1.4	0.10	1.10	1.1	9	52	52	52	52	52	52	52	96
Washington State	2.5	1.4	0.52	5.9	2.9	0.8	5	4	52	52	52	52	52	52	121
Franklin State	0.0	1.4	0.11	4.5	5.5	1.1	5	52	52	52	52	52	52	52	121
Madison State	1.0	0.0	1.4	0.10	1.10	1.1	9	52	52	52	52	52	52	52	96
Marion State	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Montana State	2.5	1.4	0.52	5.9	2.9	0.8	5	4	52	52	52	52	52	52	121
Nebraska State	0.0	1.4	0.11	4.5	5.5	1.1	5	52	52	52	52	52	52	52	121
Kansas State	1.0	0.0	1.4	0.10	1.10	1.1	9	52	52	52	52	52	52	52	96
Oklahoma State	2.5	1.4	0.52	5.9	2.9	0.8	5	4	52	52	52	52	52	52	121
Arkansas State	0.0	1.4	0.11	4.5	5.5	1.1	5	52	52	52	52	52	52	52	121
Texas State	1.0	0.0	1.4	0.10	1.10	1.1	9	52	52	52	52	52	52	52	96
Montana State	2.5	1.4	0.52	5.9	2.9	0.8	5	4	52	52	52	52	52	52	121
Washington State	0.0	1.4	0.11	4.5	5.5	1.1	5	52	52	52	52	52	52	52	121
Franklin State	1.0	0.0	1.4	0.10	1.10	1.1	9	52	52	52	52	52	52	52	96
Madison State	2.5	1.4	0.52	5.9	2.9	0.8	5	4	52	52	52	52	52	52	121
Marion State	0.0	1.4	0.11	4.5	5.5	1.1	5	52	52	52	52	52	52	52	121
Montana

WATER SUPPLY OUTLOOK

MONTANA. The water content of the snow cover on the watersheds of the Missouri and its tributaries shows an average of about 1/3 more in comparison with that a year ago and 1/5 more than the five-year average. Snow cover on the watershed of the Marias River is much below normal.

WYOMING. Snow cover in the Big Horn mountains, upper Wind River country, is normal at this time and equal to that of a year ago. Stream flow last fall was much above normal and reservoir filling in this area good to excellent. The soil moisture conditions are good. The present indications for an irrigation water supply in this section of Wyoming are quite favorable.

For the North Platte River drainage, the recent surveys indicate the water content of the snow to be 16 percent more than last year and about an equal amount less than the past seven-year average. Reservoir storage is good in the valley, soil moisture fair to good; and stream flow normal. Snow conditions in North Park in Colorado are better than last year at this time, with soil moisture the best in years. The water content of the snow on Old Battle snow course measured 16.2 inches recently, in comparison with 13.3 inches last February first. The present general conditions over the North Platte drainage are favorable for ample irrigation supply this coming season.

The water content of the snow cover in the high mountain country of the Laramie River drainage is about normal, in comparison with the past seven-year average, and nearly 25 per cent better than a year ago. In the Laramie valley to State Line, there has been little snow so far this winter. Stream flow during the past months has been good and soil moisture good to excellent in both mountain and valley areas. The present outlook for next season's water supply is quite promising at this time.

COLORADO. On the upper South Platte River drainage the water content of the snow is at present about 75 per cent better than a year ago and 32 per cent more than the past seven-year average. The snow cover on the tributaries of the South Platte, in northern Colorado, is, on the whole, improved at this time, the percentages varying from about normal to more than twice that of a year ago. Over this northern section of the State, the water content of the snow at this time is approximately 10 per cent less than the seven-year average.

Stream flow during the past fall and early winter has been good, better than last year for the same period. Soil moisture in both the mountain and valley areas is good to excellent. The reservoirs in the lower Platte Valley are well filled at this time, with indications that full capacity will be reached. Storage along the tributaries is about normal for this time of year. Generally, the outlook for water supplies in this part of Colorado is encouraging at this time.

Over the Arkansas River drainage, high mountain country, the water content of the snow cover is now about 10 per cent less than the seven-year average and 14 per cent less than it was a year ago. The fall and early winter flow of the river and tributaries has been well above normal, with a considerable amount of water flowing over the State Line into Kansas. The storage in valley reservoirs at this time is the best in many years, with practically all major reservoirs full. Last year at this time these were empty. Soil moisture in both the mountain and valley areas is good. The present outlook for irrigation supplies in this valley for the coming season is especially good in view of the large amount of water now in storage.

NORTHAMPTON. The water content of the snow cover on the watersheds of the Hiasount and its tributaries shows an average of about 1½ more in comparison with that of last year and 1½ more than the five-year average. Snow cover on the Mates River is much deeper than normal. Upper Nimi Hiver contains at this time and equal to that of the Mates River in the Big Hole Mountains, upper Nimi Hiver, is normal in this area good to excellent.

WYOMING. Snow cover in the Big Hole Mountains above normal and reservoir filling in this area good to excellent.

The soil moisture conditions are good. The outlook for irrigation water supply in this section of Wyoming are quite favorable. Irrigation reservoirs above the water conditions of the valley are in good condition.

For the last year and during the last month the Snow content in the Mates River is slightly above normal. Water supply is good in the Big Hole Mountains and the Big Hole Mountains, upper Nimi Hiver contains at this time and equal to that of the Mates River in the Big Hole Mountains, upper Nimi Hiver, is normal.

CONNECTICUT. The water supply in the Hiasount Mountains is good to excellent. The soil moisture conditions are good. The outlook for irrigation water supply in this section of Wyoming are quite favorable. Irrigation reservoirs above the water conditions of the valley are in good condition.

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MISSOURI AND ARKANSAS RIVER WATERSHEDS

Summary of Federal and State Cooperative Snow Surveys

Issued February 10, 1942, at Fort Collins, Colo.

No.	Main Drainage and Snow Course	Local Drainage	Location: State	Location: Locality	Location: Description	Elev.	National Forest	Feb. 1 Snow Cover Measurements: Av. Snow Depth Av.©	Av. Snow Depth 1941	Av. Snow Depth 1942	Av. Water Content Av.@	Av. Water Content 1941	Av. Water Content 1942
								In.	In.	In.	In.	In.	In.
	JEFFERSON RIVER												
6	Camp Creek*	Red Rock Cr.	Idaho	6mi.N.Spencer	21-13N-36E	6800	Targhee	22.5	26.0	29.4	5.0	6.1	6.9
7	Moose Creek*	N.Fk.BigHole	"	3mi.S.Gibbons P.	27-27N-21E	6200	Salmon	--	--	--	--	--	--
10	Gibbons Pass	N.Fk.BigHole	Mont.	Gibbons Pass	4-2S-19W	7100	Bitterroot	41.2	37.5	49.3	10.9	10.6	13.4
30	Pipestone Pass	Pipestone Cr.	"	Pipestone Pass	11-1N-7W	7200	Deer Lodge	13.5	11.6	17.4	2.6	2.1	3.7
					Average for Drainage			25.7	25.0	32.0	6.2	6.3	8.0
	MADISON RIVER												
2	Aster Creek*	Firehole R.	Wyo.	Lewis Lake	44.3N110.6W	7700	Yel.Nat.P.	43.0	49.2+	43.3+	11.9	12.8+	13.2+
8	Lewis L.Divide*	" "	"	3mi.S.Lewis L.	44.2N110.7W	7900	" " "	59.9	64.2+	54.9+	17.6	19.2+	16.7+
3	Big Springs*	South Fork	Idaho	Big Springs	34-14N-44E	6500	Targhee	41.4	45.6	46.6	9.7	11.2	10.4
16	West Yellowstone	South Fork	Mont.	W.Yellowstone	34-13S-5E	6700	Gallatin	26.9	26.4	31.0	5.7	6.1	6.6
	Twenty-one Mile*	Greyling Cr.	"	8mi.S.Gallatin	1-11S-5E	7150	Yel.Nat.P.	33.7	30.3	41.0	8.0	7.7	9.1
	Hebgen Dam	Cabin Creek	"	Hebgen Dam	22-11S-3E	6550	Gallatin	33.2	29.4	30.0	7.4	7.1	6.0
	Valley View	Denny Cr.	Idaho	5mi.E.Henry's L.	7-15N-44E	6500	Targhee	--	--	--	--	--	--
					Average for Drainage			39.7	40.8	41.1	10.0	10.7	10.3
	GALLATIN RIVER												
	Mystic Lake No.1	Bozeman Cr.	Mont.	12mi.SE.Bozeman	31-3S-7E	6600	Gallatin	22.8	18.0	32.0	4.9	4.2	6.6
	Mystic Lake No.2	" "	"	" " "	31-3S-7E	6600	"	20.2	15.0	26.5	4.4	3.5	5.2
	Twenty-one Mile	Gallatin River	"	8mi.S.Gallatin	1-11S-5E	7150	Yel.Nat.P.	33.7	30.0	41.0	8.0	7.7	9.1
					Average for Drainage			25.5	21.0	33.2	5.8	5.1	7.0

*On adjacent drainage

+Readings Jan. 16

@Average for period of record

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								In.	In.	In.	In.	In.	In.
	MISSOURI RIVER												
6	Chessman Res.	Tenmile Cr.	Mont.	11mi.SW.Helena	2-8N-5W	6200	Helena	10.8	8.0	11.0	2.4	2.1	2.8
41	Tenmile Cr.Lower	Tenmile Cr.	"	17mi.SW.Helena	13-8N-6W	6250	"	17.7	12.0	20.0	3.8	2.5	5.1
42	Tenmile Cr.Middle	" "	"	" " "	13-8N-6W	6800	"	23.8	17.6	27.0	5.3	3.5	7.6
43	Tenmile Cr.Upper	" "	"	" " "	19-8N-5W	8000	"	27.7	21.2	32.0	6.7	4.8	8.8
					Average for Drainage			20.0	14.7	22.5	4.6	3.2	6.0
	MARIAS RIVER												
7	Descrt Mountain*	Cutbend Cr.	Mont.	4mi.S.Belton	24-31N-19W	5600	Flathead	--	32.6	--	--	9.8	--
20	Marias Pass	Two Medicine	"	Summit	48.3N113.4W	5250	Glacier NP	30.0	25.5	17.0	9.1	7.4	4.6
					Average for Drainage			30.0	25.5	17.0	9.1	7.4	4.6
	SHOSHONE RIVER												
50	Brooks Lake #3*	Shoshone R.	Wyo.	Brooks Lake	23-44N-110W	9200	Washakie	35.2	43.4	36.6	9.0	10.6	9.7
	BIGHORN RIVER												
12	Togwotee Pass	Wind River	Wyo.	Togwotee Pass	29-44N-110W	9600	Teton	53.7	45.5	52.0	15.1	13.3	13.9
45	Sawmill Glade	Popo Agie R.	"	13mi.SW.Lander	3-31N-101W	8500	Washakie	10.8	9.7	12.0	1.9	E2.0	1.8
46	Blue Ridge	" " "	"	15mi. " "	23-31N-101W	9500	"	17.2	16.1	18.2	3.2	3.2	3.3
47	South Pass	L.Popo Agie R.	"	19mi. " "	13-30N-101W	9000	"	23.5	24.5	22.5	4.6	5.6	3.7
49	Sheridan Cr.R.S.#2	Sheridan Cr.	"	16mi.NW.Dubois	3-42N-109W	7500	"	18.0	18.7	17.2	3.2	3.9	2.4
50	Brooks Lake #3	Wind River	"	Brooks Lake	23-44N-110W	9200	"	35.2	43.4	36.6	9.0	10.6	9.7
14	Dome Lake	Goose Cr.	Wyo.	Dome Lake	11-53N-87W	8800	Bighorn	15.0	18.4	15.9	3.3	3.4	3.6
51	St.Lawrence R.S.	St.Lawrence Cr.	"	27mi.NW.Lander	26-1N-4W	9000	Shos.I.R.	13.5	10.3	16.7	2.8	1.9	3.6
52	Mosquito Park RS	Trout Creek	"	18mi. " "	23-2S-3W	9500	" " "	19.6	11.9	27.2	3.2	2.0	4.4
53	DuNoir	Wind River	"	9mi.NW Dubois	27-42N-108W	8750	Washakie	20.4	19.2	21.6	4.3	4.3	4.3
54	T-Cross Ranch	Horse Creek	"	12mi.N.Dubois	1-43N-107W	8000	"	11.8	12.0	10.7	2.1	2.2	2.0
					Average for Drainage			21.7	20.9	22.8	4.8	4.8	4.8

*On adjacent drainage

E - Estimated

@Average for period of record

MISSOURI AND ARKANSAS RIVER WATERSHEDS

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No.	Main Drainage and Snow Course	Local Drainage	Location: State	Location: Locality	Location: Description	Elev.	National Forest	Feb. 1 Snow Cover Measurements: Av. Snow Depth Av.©	Av. Snow Depth 1941	Av. Snow Depth 1942	Av. Water Content Av.©	Av. Water Content 1941	Av. Water Content 1942
								In.	In.	In.	In.	In.	In.
	NO. PLATTE RIVER												
1	Cameron Pass	Michigan Cr.	Colo.	Cameron Pass	2-6N-76W	10300	Roosevelt	38.8	30.3	37.0	10.4	9.8	8.3
7	Park View	Illinois Cr.	"	7mi.SE.Rand	24-5N-78W	9200	Routt	24.2	20.2	24.5	5.0	3.5	4.4
8	Columbine Lodge	Grizzly Cr.	"	Rbt. Ears Pass	21-5N-82W	9300	"	52.3	40.5	51.9	12.8	9.1	11.7
62	Willow Creek P.*	Illinois Cr.	"	Willow Cr.Pass	1-4N-78W	9500	Arapaho	31.3	24.8	31.8	7.0	5.1	7.1
7	Bottle Creek	Encmpmnt Cr.	Wyo.	7mi.SW.Encmpmnt	24-14N-85W	8200	MedicineBow	30.1	23.6	30.7	6.7	5.6	5.8
8	Webber Spring	" "	"	10mi.W. "	27-14N-85W	9000	" "	37.4	30.7	39.3	8.4	6.3	8.1
9	Old Battle	" "	"	12mi.W. "	29-14N-85W	9800	" "	61.8	51.0	63.5	15.9	13.3	16.2
37	North French Cr.	N.French Cr.	"	Cent/Saratoga	27-16N-80W	10200	" "	61.0	44.7	49.7	16.0	10.5	10.7
38	N.Barrett Cr.#2	Barrett Cr.	"	" "	30-16N-80W	9400	" "	49.9	37.5	36.1	12.3	7.4	9.2
39	Ryan Park #2	" "	"	" "	34-16N-81W	8400	" "	34.5	27.4	29.3	7.8	5.5	6.6
					Average for Drainage			42.1	33.1	39.4	10.2	7.6	8.8
	SWEETWATER RIVER												
29	Grannier Meadows	Rock Creek	Wyo.	20mi.SW.Lander	19-30N-100W	9000	Washakie	25.3	26.5	24.1	5.1	6.5	3.7
	LARAMIE RIVER												
3	Brooklyn Lake	Nash Fork	Wyo.	7mi.NW.Cntennl	11-16N-79W	10200	MedicineBow	37.5	26.5	35.5	10.7	7.1	10.7
11	Fox Park	Fox Creek	"	Fox Park	21-13N-78W	9200	" "	23.0	18.1	23.8	5.2	3.6	5.1
34	Pole Mountain#2*	Soldier Cr.	"	10mi.SE.Laramie	35-15N-72W	8700	" "	14.6	10.1	14.6	3.0	2.7	2.6
35	Libby Lodge #2	Libby Creek	"	3mi.NW.Cntennial	29-16N-78W	8700	" "	19.4	17.4	18.5	4.0	3.6	4.0
36	Hairpin Turn #2	Nash Fork	"	5mi.NW. "	24-16N-79W	9500	" "	21.9	15.9	20.2	5.1	3.6	4.7
4	W.Port.G-P.Tunnel	Laramie R.	Colo.	4mi.N.ChambersL	7-8N-75W	8600	Roosevelt	20.8	14.1	22.0	4.7	4.6	3.1
50	Deadman Hill*	Deadman Cr.	"	10mi.W.R.Feather	26-10N-75W	10200	"	29.0	21.5	32.9	6.2	4.6	6.0
71	Deadman Hill#2*	Deadman Cr.	"	8mi.SW." "	6-9N-74W	10200	"	24.9	18.5	28.0	5.0	3.7	5.2
88	Roach	LaGarde Cr.	"	8mi.NW.Glendevy	5-10N-77W	9800	"	35.3	32.5	34.8	7.6	6.7	9.0
					Average for Drainage			25.2	19.4	25.6	5.7	4.5	5.6

*On adjacent drainage

©Average for period of record

MISSOURI AND ARKANSAS RIVER WATERSHEDS

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								In.	In.	In.	In.	In.	In.
	SOUTH PLATTE RIVER												
14	Hoosier Pass	S.Platte R.	Colo.	Hoosier Pass	13-8S-78W	11400	Pike	26.0	21.9	29.6	4.8	3.0	5.8
15	Fairplay	" " "	"	Fairplay	33-9S-77W	10000	"	5.0	9.8	6.0	0.5	0.8	0.9
83	Jefferson Cr.#2	Jefferson Cr.	"	5mi.NW.Jefferson	14-7S-76W	10100	"	21.1	18.3	26.1	3.1	2.6	4.5
							Average for Drainage	17.4	16.7	20.6	2.8	2.1	3.7
	CROW CREEK												
34	Pole Mountain#2	Crow Creek	Wyo.	10mi.SE.Laramie	35-15N-72W	8700	MedicineBow	14.6	10.1	14.6	3.0	2.7	2.6
	POUDRE RIVER												
1	Cameron Pass	Joe Wright Cr.	Colo.	Cameron Pass	2-6N-76W	10300	Roosevelt	38.8	30.3	37.0	10.4	9.8	8.3
2	Chambers Lake	Poudre River	"	Chambers Lake	6-7N-75W	9000	"	14.8	8.8	12.1	3.8	3.2	3.1
3	Big South	" "	"	2mi.E.Chambers L.	33-8N-75W	8600	"	5.4	3.5	4.5	1.1	1.2	0.5
50	Deadman Hill	N.Poudre R.	"	10mi.W.R.Feather	26-10N-75W	10200	"	29.0	21.5	32.9	6.2	4.6	6.0
65	Lake Irene*	Big S.Poudre	"	1mi.SW.Milner P.	8-5N-75W	10600	Ry.Mtn.N.P.	47.0	34.5	44.9	12.5	7.4	10.3
68	Hour Glass Lake	L.S.Poudre	"	2mi.NW.PingreeP.	18-7N-73W	9500	Roosevelt	17.6	11.5	20.4	3.3	2.2	2.9
71	Deadman Hill #2	N.Poudre R.	"	8mi.SW.R.Feather	6-9N-74W	10200	"	24.9	18.5	28.0	5.0	3.7	5.2
							Average for Drainage	25.4	18.4	25.7	6.0	4.6	5.2
	BIG THOMPSON												
65	Lake Irene*	Big.Thompson R.	Colo.	1mi.SW.MilnerP.	8-5N-75W	10600	Ry.Mtn.N.P.	47.0	34.5	44.9	12.5	7.4	10.3
95	Hidden ValleyNo.2	HiddenVal.Cr.	"	9mi.W.Estes P.	23-5N-74W	9550	" " " "	22.2	21.0	23.4	4.4	4.2	4.6
							Average for Drainage	34.6	27.8	34.2	8.4	5.8	7.4
	ST. VRAIN RIVER												
41	Wild Basin	N.St.Vrain R.	Colo.	5mi.W.Allens P.	24-3N-74W	10000	Ry.Mtn.N.P.	26.0	19.4	31.6	5.7	2.2	7.6
	BOULDER CREEK												
5	E.Port.Moffat T.	S.Boulder Cr.	Colo.	East Portal	2-2S-74W	9400	Roosevelt	8.9	10.7	6.8	1.9	1.7	1.6
60	UniversityCamp#2	N.Boulder Cr.	"	5mi.SW.Ward	28-1N-73W	10300	"	31.9	20.5	27.8	8.6	4.3	7.2
							Average for Drainage	20.4	15.6	17.3	5.2	3.0	4.4

*On adjacent Drainage
@Average for period of record

MISSOURI AND VERMONT STATE AVERAGES

Summary of largest and least cooperative Bird Stations

Issued February 10, 1937, as Form 0-1111 Office of

| Name of station | County | State | Observer | Date established | Elevation | Average for previous 5 years | | |

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								In.	In.	In.	In.	In.	In.
	CLEAR CREEK												
61	Loveland Pass#2	Clear Creek	Colo.	10mi.W.Georgetown	27-4S-76W	10100	Arapaho	26.3	25.5	29.5	4.6	3.9	4.8
97	Grizzly Peak*	" "	"	1mi.W.Loveland P	2-5S-76W	11250	"	--	--	34.0	--	--	7.9
				Average for Drainage				26.3	25.5	29.5	4.6	3.9	4.8
	ARKANSAS RIVER												
19	Tennessee Pass	Tennessee Cr.	Colo.	Tennessee Pass	21-8S-80W	10200	Cochetopa	24.0	21.2	26.4	4.2	3.1	5.1
21	Twin Lakes Tun.	Lake Creek	"	9mi.W.Twin Lakes	22-11S-82W	10500	"	26.3	23.6	25.4	6.1	4.5	5.9
42	Marshall Creek*	Poncha Cr.	"	Marshall Pass	24-48N-6E	10800	"	31.0	34.5	30.6	7.0	7.8	6.4
43	Poncha Creek	" "	"	" "	19-48N-7E	10500	"	25.2	33.4	23.5	6.5	7.9	6.1
72	Whiskey Creek #2	Whiskey Cr.	"	Whiskey Cr.Pass	37.2N105.2W	10300	Maxwell Gr.	14.7	25.4	6.2	3.9	7.0	1.4
74	LaVeta Pass#2*	Cuchara Cr.	"	LaVeta Pass	22-28S-70W	9300	SanCristoGr	20.3	29.1	16.7	4.0	6.4	2.5
78	Four Mile Park#2	Lake Creek	"	3mi.SW.Twin L.	23-11S-81W	9700	Cochetopa	--	12.7	--	--	2.5	--
79	Fremont Pass #2	E.Fork Ark.R.	"	Fremont Pass	2-8S-79W	11400	Arapaho	39.0	33.3	42.3	7.8	4.8	8.1
92	Monarch Pass	S.Fork Ark.R.	"	Monarch Pass	16-49N-6E	10500	Cochetopa	45.2	44.3	46.2	9.4	10.0	8.9
					Average for Drainage			28.2	30.6	27.2	6.1	6.4	5.5

*On adjacent drainage
@Average for period of record

Average for Basins of Approx

Average for Stations

| | | |